APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/253,250	02/19/1999	MICHAEL E. BASKEY	PO9-99-014	5382

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EXAMINER
TODD, GREGORY G

ART UNIT	PAPER NUMBER
2157	

DATE MAILED: 01/27/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 07-01)

	Application No.	Applicant(s)
Office Action Summary	09/253,250	BASKEY ET AL.
	Examiner	**Art Unit**	
	Gregory G Todd	2157	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on *03 December 2002* .

2a) ☒ This action is **FINAL**.   2b) ☐ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *1-22* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) *1-22* is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☒ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) ☒ The proposed drawing correction filed on *03 December 2002* is: a) ☐ approved b) ☒ disapproved by the Examiner.

    If approved, corrected drawings are required in reply to this Office action.

12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All b) ☐ Some * c) ☐ None of:

       1. ☐ Certified copies of the priority documents have been received.

       2. ☐ Certified copies of the priority documents have been received in Application No. _____ .

       3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

    a) ☐ The translation of the foreign language provisional application has been received.

15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)   4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)   5) ☐ Notice of Informal Patent Application (PTO-152)

3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *8* .   6) ☐ Other: .

DETAILED ACTION

Response to Amendment

1.   This is a second office action in response to applicant's amendment filed, 03

December 2002, of application filed, with the above serial number, on 19 February 1999

in which claims 1-2, 7, 9-10, 12-15, 18-19 and 22 have been amended and claims 3-6,

8, 11, 16-17, and 20-21 have been unaltered. Claims 1-22 are therefore pending in the

application.

Claim Rejections - 35 USC § 112

2.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly
> claiming the subject matter which the applicant regards as his invention.

3.   Claim 12 recites the limitation "said application server(s)" in line 4. There is

insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

1.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public
> use or on sale in this country, more than one year prior to the date of application for patent in the United
> States.

2.   Claims 1-2, 4, 6, 10-13, 14-15, 17, and 19-20 are rejected under 35

U.S.C. 102(b) as being anticipated by Caldarale et al (hereinafter "Caldarale",

5,659,794).

3.   As per Claim 1, Caldarale discloses an apparatus for providing direct processing

access between application servers and application users wherein Caldarale discloses:

        - main storage capable of establishing processing communication with more than

one application server (feature of Fig. 1 (24); at least col. 6, lines 21-27, 9-12);

        - main storage containing a queuing mechanism for retrieval and storage of

incoming and outgoing data without causing interrupts in any running programs (feature

of Fig. 2 (59 &60)) (at least col. 8, lines 15-16, 25-27);

        - an interface element capable of establishing processing communication

between said queuing mechanism and at least one application user (NIOP) (feature of

Fig. 1 (10 & 46 & 16));

        - an interrogator (network I/O microcode controlling queue bank) operating

independent of any application server for examining multiple queues in queue

mechanism to transfer appropriate requests, responses and data between application

servers and application user(s) (at least col. 7, line 44 - col. 8, line 25).

4.   As per Claim 2.

        - interface element further comprises of a connector interface element

(channel/peripheral interfaces) (at least col. 6, lines 39-41)) and a network interface

element (network interface) (features of Fig. 1 (10 26)).

5.   As per Claim 4.

        - connector interface element comprises a plurality of processors (at least one

NIOP / multiple NIOPs) (at least col. 6, lines 32-46).

6.   As per Claim 6.

- main storage can be in processing communication with a plurality of network

elements and servers (at least col. 6, lines 21-27, 9-12; Fig. 1).

7.   As per Claim 10.

- network interface element further comprises an I/O device adapter (NIOP

contains...Channel/Network I/O microcode...Channel microcode utilizes CA...multiple

adapters in NIOP, network channels) (at least col. 7, lines 13-19, 40-41), at least one

more processor (network interface controller) (at least col. 7, lines 42-46) and a local

storage area (NIOP message buffers made up of queue banks) (at least col. 7 line 63 -

col. 8 line 2).

8.   As per Claim 11.

- Network Interface Element is capable of connecting to one or more individual

application users (feature of Fig. 1).

9.   As per Claim 12.

- Interface Element (NIOP) performs computing network environment functions

establishing network communications between said application server(s) and said

application user(s) (at least col. 7, lines 50-57).

10.   As per Claim 13.

- Interface Element (NIOP) performs control unit (I/O device controlling) functions

(buffering and queuing) (at least col. 7, lines 50-57).

11.   As per Claim 14, Caldarale discloses an apparatus for providing direct

processing access between a main storage, capable of connecting to more than one

application server and an interface element with at least one adapter capable of

establishing processing communication with at least one application user(s), and

adapter wherein Caldarale discloses:

- data receivers set up in each of the application servers for processing data

(servers implicitly process received data) (at least col. 6, lines 20-31);

- a plurality of queues located in main storage for providing continuous running of

programs without interruptions (feature of Fig. 2);

- an updator for changing the status of network computing system every time

new data is received, deleted or modified (at least col. 3, lines 55-65; col. 9, lines 29-

31);

- an interrogator operating independent of any application server for interrogating

multiple existing queues in main storage simultaneously to process any received data or

requests such that data or requests may be received from more than one application

server (at least col. 7, line 44 - col. 8, line 25);

- a determinator for interrogation and routing of data to appropriate application

user to which data has been forwarded (transferring to particular network interface

based on network interface ID and address) (at least col. 17, lines 21-51).

12.   As per Claim 15.

- interface element further comprises of a connector interface element

(channel/peripheral interfaces) (at least col. 6, lines 39-41)) and a network interface

element (network interface) (features of Fig. 1 (10 26)).

13.   As per Claim 17.

- main storage can be in processing communication with a plurality of network

elements and servers (at least col. 6, lines 21-27, 9-12; Fig. 1).

14.   As per Claim 19.

- network interface element further comprises an I/O device adapter (NIOP

contains...Channel/Network I/O Microcode...Channel microcode utilizes CA...multiple

adapters in NIOP, network channels) (at least col. 7, lines 13-19, 40-41), at least one

more processor (network interface controller) (at least col. 7, lines 42-46) and a local

storage area (NIOP message buffers made up of queue banks) (at least col. 7 line 63 -

col. 8 line 2).

15.   As per Claim 20.

- Network Interface Element is capable of connecting to one or more individual

application users (feature of Fig. 1).

Claim Rejections - 35 USC § 103

16.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

17.   Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Caldarale

in view of Carbillet (hereinafter "Carbillet", 6,256,696).

Caldarale fails to disclose using his **plurality of processors for** specifically

redundant capabilities. However, the use and advantages for using such a protocol is

well known to one skilled in the art at the time the invention was made as evidenced by the teachings of Carbillet. Carbillet discloses using a plurality of processors for the purpose of redundance in communication information processing systems (at least col. 1, lines 19-28). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the use of Carbillet's processor redundancy into Caldarale's multiple processors so as to protect the system from failure in the case of one processor failing for any reason, the other processor would go on to complete the information processing, especially important for critical informations systems.

18.   Claims 7 & 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Caldarale in view of Brandt et al (hereinafter "Brandt", 6,081,834).

Although Caldarale suggests using a specific network protocol (at least Caldarale col. 11, lines 53-55), Caldarale fails to explicitly disclose using a TCP/IP oriented web-server. However, the use and advantages for having such a protocol implemented on the network is well known to one skilled in the art at the time the invention was made as evidenced by the teachings of Brandt (at least col. 12, lines 1-7; col. 10, lines 51-55). Brandt teaches a network provider (web server) using a TCP/IP protocol. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have a TCP/IP oriented web-server on Caldarale's network because this would enhance the expendability and compatibility of Caldarale's network since it would allow

for the incorporation of new and future networking protocol implementations for existing

network equipment and users.

19.   Claims 3 & 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Caldarale in view of Casper et al (hereinafter "Casper", 6,192,482).

Caldarale fails to disclose the connector interface element is in processing

communication with main storage via a Self-Timed Interface or an STI bus. However,

the use and advantages for using such an interface is well known to one skilled in the

art at the time the invention was made as evidenced by the teachings of Casper (at

least abstract; col. 7, lines 30-36). Therefore, it would have been obvious to one of

ordinary skill in the art at the time the invention was made to implement the use of a STI

bus into Caldarale's system because the STI interface would offer more compatible

interface connectivity solutions when different equipment vendors are involved, such as

a heterogeneous system environment and is additionally operated at a faster clock

speed.

20.   Claims 9, 18, 21 & 22 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Caldarale in view of Leger et al (hereinafter "Leger", 5,765,023).

21.   As per Claims 9 and 18.

Although Caldarale suggests using an ISA interface between the interface

elements (at least col. 6, lines 32-35), Caldarale fails to disclose the connector interface

element and network interface element being in processing communication with one

another via a PCI bus. However, the use and advantages for using such an interface is

well known to one skilled in the art at the time the invention was made as evidenced by

the teachings of Leger (at least col. 3, lines 35-42). Therefore, it would have been

obvious to one of ordinary skill in the art at the time the invention was made to

implement Leger's use of a PCI bus as opposed to Caldarale's ISA bus because a PCI

bus is a more widely-used interface and is additionally operated at a faster clock speed.

22.   As per Claim 21.

Caldarale fails to disclose the connector interface element being in processing

communication with main storage via a direct access memory I/O device. However, the

use and advantages for using DMA between memory and an interface is well known to

one skilled in the art at the time the invention was made as evidenced by the teachings

of Leger (at least Leger abstract). Therefore, it would have been obvious to one of

ordinary skill in the art at the time the invention was made to incorporate the use of

using DMA between storage devices and I/O interfaces into Caldarale's system

because this would enhance the speed and processing power of the other processors,

by offloading this task to a DMA I/O device to move the data from one peripheral to the

main memory for faster computations.

23.   As per Claim 22.

Caldarale fails to disclose the connector interface element and network interface

element being in processing communication with one another via a direct access

memory I/O device. However, the use and advantages for using DMA between memory

of different components (such as a peripheral and NIC) within a system is well known to

one skilled in the art at the time the invention was made as evidenced by the teachings

of Leger (at least Leger abstract). Therefore, it would have been obvious to one of

ordinary skill in the art at the time the invention was made to incorporate the use of

using DMA between I/O interfaces into Caldarale's system because this would enhance

the speed and processing power of the other processors, by offloading this task to a

DMA I/O device to move the data to/from one peripheral from/to another component

such as a NIC to be transferred over a network for faster network data transmission.

Response to Arguments

4.   Applicant's arguments filed 03 December 2002 have been fully considered but

they are not persuasive. In the remarks, the applicant argues in substance that A)

Caldarale et al (hereinafter "Caldarale", 5,659,794) does not disclose communicating

with multiple servers and an "interrogator" to examine multiple queues from the

application servers as in claims 1 and 14; B) Caldarale in view of Carbillet (hereinafter

"Carbillet", 6,256,696) do not disclose having a plurality of processors to be used with

multiple queues in storage to transfer appropriate requests, responses and data

between multiple application servers of the multiple processors and an application user

as in claim 5; C) Caldarale in view of Brandt et al (hereinafter "Brandt", 6,081,834) do

not disclose a TCP/IP oriented server in communication with main storage having a

queuing mechanism wherein data may be exchanged with more than one application

server as in claims 7 and 8; D) Caldarale in view of Casper et al (hereinafter "Casper",

6,192,482) do not disclose the STI link may be used in connection with main storage

having queuing mechanism wherein data may be exchanged with more than one

application server as in claims 3 and 16; E) Caldarale in view of Leger et al (hereinafter

"Leger", 5,765,023) do not disclose a main memory having a queuing mechanism

wherein data may be exchanged with more than one application server as in claims 9,

18, 21, and 22.

5.   In response to A): Caldarale clearly discloses connecting to at least one network

(at least col. 6, lines 7-12) and that the system connects to the network with various

servers and that "the number of...servers connected to the network and desiring to

communicate with the computer system may be from several systems to hundreds of

systems" (at least col. 6, lines 21-28) and that the main storage unit has a separate

queue bank controlled by Network I/O Exec Services to store network messages and

queues "interrogator" operating (at least col. 7 line 59 - col. 8 line 10; Fig. 3). Therefore,

the original rejection under Caldarale stands, as Caldarale exhibits those limitations

being argued, and thus claims 1 and 14 and the claims depended therefrom are

rejected under 35 U.S.C. 102(b) as being anticipated by Caldarale.

6.   In response to B): Carbillet was not relied upon to teach the transferring

appropriate requests, responses and data aspect of the invention, as Carbillet was

relied upon simply as it discloses the use of multiple processors being used for

redundant purposes.

7.   In response to C): Brandt was not relied upon to teach the TCP/IP server in

communication with the application servers sp ecifically, as Brandt was relied upon

simply as it discloses the use of servers using the TCP/IP protocols.

8.   In response to D): Casper was not relied upon to teach the STI link being used in

connection with main storage to exchange data with multiple application servers, as

Casper was relied upon simply as it discloses the use of the legacy STI bus to connect

to an attached storage link.

9.   In response to E): Leger was not relied upon to teach the main memory having a

queuing mechanism wherein data may be exchanged with more than one application

server, as Leger was relied upon simply as it discloses the use of the different interface

elements and main storage communicating with each other via the different specific

claimed buses and methods.

Conclusion

10.   **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time

policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later

than SIX MONTHS from the mailing date of this final action.

24.   The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Bahls et al, Freund et al, Mukherjee et al, Brandt et al (6,021,430), Garcia, Bartek et al, Sharma et al, Chin et al, and Kawaguchi et al are cited for disclosing pertinent information related to the claimed invention. Applicants are requested to consider the prior art reference for relevant teachings when responding to this office action.

25.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gregory G Todd whose telephone number is (703)305-5343. The examiner can normally be reached on Monday - Friday 8:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ario Etienne can be reached on (703)308-7562. The fax phone numbers for the organization where this application or proceeding is assigned are (703)746-9153 for regular communications and (703)305-7201 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)305-3900.

gt
January 17, 2003

SALEH NAJJAR
PRIMARY EXAMINER